

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ
ЦЕНТР**

**МАТЕРІАЛИ
X ВСЕУКРАЇНСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ
КОНФЕРЕНЦІЇ СТУДЕНТІВ, АСПІРАНТІВ ТА
ВИКЛАДАЧІВ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО
ЦЕНТРУ КАФЕДРИ ІНОЗЕМНИХ МОВ**

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PROTECTIVE ROLE OF THE PLACENTA AGAINST TOXIC EFFECTS OF CADMIUM

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The placenta has a number of features that ensure the passage of many biological substances to the fetus, as well as the function of barrier for certain substances. According to researchers, it can be used as a marker of unfavorable environmental action.

One of the most toxic trace elements is cadmium. This trace mineral is also determined in the organism of newborn children. With age, cadmium accumulates in the body, and in 50 years its content can reach up to 20-30 mg. In nature cadmium is present in soil, food, sea water. Mining and metallurgy, electronic and electrical industry, superphosphate fertilizers are an important source of cadmium contamination. The content of cadmium in the environment most regions of Ukraine has increased after the Chernobyl disaster.

Placenta, kidney, bone marrow, semen, liver, bone and spleen are target organs of cadmium toxicity.

The penetration of cadmium through the placenta is negligible, therefore, its content in the mother's blood 2 times higher than in the blood of a newborn baby. High level of cadmium accumulation in the placenta indicates protective properties of the latter relative to the cadmium. Elevated concentrations of cadmium were detected in the placenta of mothers who gave birth to children with low birth weight. According to the researchers, the intrauterine

growth retardation caused a violation by cadmium transplacental transfer of zinc to fetus.

The effect of cadmium occurs due to the use of contaminated food (in particular seafood - especially mussels and oysters), cereals and leafy vegetables, polluted air (industrial pollutant), smoking (active and passive) by a pregnant woman. This makes a subsequent negative impact on the fetus.

The content of cadmium in the blood is 0,4 -1,0 $\mu\text{g} / \text{l}$. Its concentration in plasma of cord blood is 0,3-0,5 $\mu\text{g} / \text{l}$, in erythrocytes - 0.5-0.9 $\mu\text{g} / \text{l}$.

The concentration of cadmium in the placenta of pregnant women is higher than in cord blood and maternal blood, and the concentration of this metal is lower in maternal blood compared to cord blood.

Based on the foregoing, modern, actual problem is the study of the toxic effects of cadmium in the system of mother-placenta-fetus. It is important to study the role of cadmium as a toxic factors contributing to miscarriage, prematurity and intrauterine growth of retardation.